Study of the terminal-based text editor such as Vim or Emacs. Basic Linux

commands, familiarity with following commands/operations expected.

Here discussing some basic Linux commands.

1. man

The man stands for manual. The man command displays the user manual of any

command that we run on the terminal. It displays the command details such as

NAME, SYNOPSIS, OPTIONS, DESCRIPTION, EXIT STATUS, RETURN

VALUES, FIL, ERRORS VERSIONS, AUTHORS, EXAMPLES.

Eg: man ls

Display the manual page for the item (program) ls.

2. ls, echo, read

ls

The ls command is used to view the contents of a directory. By default, this

command will display the contents of your current working directory. If you

want to see the content of other directories, type ls and then the directory’s path.

For example, enter ls /home/username/Documents to view the content of

Documents.

echo

This command is used to move some data into a file.

Eg: If you want to add the text, “Hello, my name is John” into a file called

name.txt, you would type echo Hello, my name is John >> name.txt

read

read command in Linux system is used to read from a file descriptor. Basically,

this command read up the total number of bytes from the specified file

descriptor into the buffer. If the number or count is zero then this command may

detect the errors. But on success, it returns the number of bytes read. Zero

indicates the end of the file. If some errors found then it returns -1.

Syntax: read

3. more, less, cat

more

As 'cat' command displays the file content. Same way 'more' command also

displays the content of a file. Only difference is that, in case of larger files, 'cat'

command output will scroll off your screen while 'more' command displays output

one screenful at a time.

Syntax: more <filename>

less

The 'less' command is same as 'more' command but include some more features.

It automatically adjusts with the width and height of the terminal window, while

'more' command cuts the content as the width of the terminal window get

shorter.

Syntax: less <filename>

cat

cat (short for concatenate) is one of the most frequently used commands in Linux.

It is used to list the contents of a file on the standard output stdout.

To run this command, type cat followed by the file’s name and its extension.

Eg: cat file.txt.

cat -> filename creates a new file.

4. cd, mkdir, pwd, find

cd

To navigate through the Linux files and directories, use the cd. It requires either

the full path or the name of the directory, depending on the current working

directory that you’re in.

cd .. (With two dots) to move one directory up

mkdir

Use mkdir command to make a new directory

Eg: If you type mkdir Music it will create a directory called Music.

pwd

Use the pwd command to find out the path of the current working directory

(folder) you’re in. The command will return an absolute (full) path, which is

basically a path of all the directories that starts with a forward slash (/). An

example of an absolute path is /home/username.

find

Find searches for files and directories. The difference is, you use the find

command to locate files within a given directory.

Eg: find /home/ -name notes.txt command will search for a file called notes.txt

within the home directory and its subdirectories.

5. mv, cp, rm, tar

mv

The primary use of the mv command is to move files, although it can also be used

to rename files. The arguments in mv are similar to the cp command. You need to

type mv, the file’s name, and the destination’s directory.

Eg: mv file.txt /home/username/Documents.

To rename files, the Linux is mv oldname.ext newname.ext

cp

Use the cp command to copy files from the current directory to a different

directory. For instance, the command cp scenery.jpg /home/username/Pictures

would create a copy of scenery.jpg (from your current directory) into the Pictures

directory.

cp –i : will ask for user’s consent in case of a potential file overwrite.

rm

The rm command is used to delete directories and the contents within them.

Eg: rm Music, will deletes the directory named Music.

tar

The tar command is the most used command to archive multiple files into a tarball

a common Linux file format that is similar to zip format, with compression being

optional.

6. wc, cut, paste

wc

wc command helps in counting the lines, words, and characters in a file. It displays

the number of lines, number of characters, and the number of words in a file.

Mostly, it is used with pipes for counting operation.

Syntax: wc [OPTION]... [FILE]...

wc [OPTION]... --files0-from=F

cut

cut command is useful for selecting a specific column of a file. It is used to cut a

specific sections by byte position, character, and field and writes them to

standard output. It cuts a line and extracts the text data. It is necessary to pass an

argument with it; otherwise, it will throw an error message.

Syntax: cut OPTION... [FILE]..

paste

Paste command is one of the useful commands in Unix or Linux operating system.

It is used to join files horizontally (parallel merging) by outputting lines consisting

of lines from each file specified, separated by tab as delimiter, to the standard

output. When no file is specified, or put dash (“- “) instead of file name, paste

reads from standard input and gives output as it is until an interrupt command

[Ctrl-c] is given.

Syntax: paste [OPTION]... [FILES]...

7. head, tail, grep, expr

head

The head command is used to view the first lines of any text file. By default, it

will show the first ten lines, but you can change this number to your liking.

For example, if you only want to show the first five lines, type head -n 5

filename.ext.

tail

This one has a similar function to the head command, but instead of showing the

first lines, the tail command will display the last ten lines of a text file.

For example, tail -n filename.ext.

grep

Another basic Linux command that is undoubtedly helpful for everyday use is

grep. It lets you search through all the text in a given file.

Eg: grep blue notepad.txt will search for the word blue in the notepad file. Lines

that contain the searched word will be displayed fully. Usually output of a

previous command is piped into the grep command.

For example: ls -l | grep “kernel”

expr

The expr command is used to evaluate a given expression and display its standard

output. Each separated expression is considered as an argument. These

expressions could be integer and string expressions, including regular

expressions. If expressions are not passed properly, it will prevent the execution

of the command. Syntax: expr expression

8. chmod, chown

chmod

Linux chmod command is used to change the access permissions of files and

directories. It stands for change mode. It cannot change the permission of

symbolic links. Even, it ignores the symbolic links come across recursive

directory traversal.

Syntax: chmod <options> <permissions> <file name>

chown

Linux chown command is used to change a file's ownership, directory, or

symbolic link for a user or group. The chown stands for change owner. In Linux,

each file is associated with a corresponding owner or group. The Linux system

may have multiple users. Every user has a unique name and user ID. If only a user

is available in the system, the user will be the owner of each file.

Syntax: chown [OPTION]... [OWNER] [: [GROUP]] FILE...

9. Redirections & Piping

Redirection is a technique that essentially allows commands to either read data

from a text file, or save the output to text files. In other words, it lets you redirect

a command’s standard output to a file rather than displaying it on the screen.

Eg:

file1

$ cat file1

apple

102

cakes

drinks

bananas

500

301

After sorting:

file2

$ sort file2

102

301

500

apple

bananas

cakes

drinks

Piping is a technique that lets you use Linux commands as building blocks to

build your own custom commands.

Eg:

$ ls -l

total 0

-rw-r--r--. 1 root root 0 Oct 20 19:22 file1

-rw-r--r--. 1 root root 0 Oct 20 19:22 file2

-rw-r--r--. 1 root root 0 Oct 20 19:22 file3

drwxr-xr-x. 2 root root 6 Oct 20 19:22 folder1

drwxr-xr-x. 2 root root 6 Oct 20 19:22 folder2

drwxr-xr-x. 2 root root 6 Oct 20 19:22 folder3

After piping:

$ ls -l | grep "^-"

-rw-r--r--. 1 root root 0 Oct 20 19:22 file1

-rw-r--r--. 1 root root 0 Oct 20 19:22 file2

-rw-r--r--. 1 root root 0 Oct 20 19:22 file3

10. useradd, usermod, userdel, passwd

useradd

useradd is used to create a new user, while passwd is adding a password to that

user’s account. To add a new person named John type, useradd John and then to

add his password type, passwd 12345678

usermod

usermod command or modify user is a command in Linux that is used to change

the properties of a user in Linux through the command line. After creating a user,

we have to sometimes change their attributes like password or login directory etc.

so in order to do that we use the Usermod command.

Eg: sudo usermod -c "This is test user" test\_user

userdel

userdel is to remove a user is very similar to adding a new user. To delete the

users account type,

Syntax: userdel UserName

passwd

passwd command in Linux is used to change the user account passwords. The

root user reserves the privilege to change the password for any user on the

system, while a normal user can only change the account password for his or her

own account.

Syntax: passwd [options] [username]

Eg: Command: passwd

11. df,top, ps

df

Use df command to get a report on the system’s disk space usage, shown in

percentage and KBs. If you want to see the report in megabytes, type df -m.

top

As a terminal equivalent to Task Manager in Windows, the top command will

display a list of running processes and how much CPU each process uses. It’s very

useful to monitor system resource usage, especially knowing which process needs

to be terminated because it consumes too many resources.

ps

Ps command will display all current processes along with their process ids (PID).

Read manuals for various options.

12. ssh, scp, ssh-keygen, ssh-copy-id

ssh

In Linux, ssh is a protocol, which stands for Secure Shell or Secure Socket Shell.

The secure shell is useful for security while connecting to a remote server. The

ssh command uses a ssh protocol, which is a secure protocol, as the data transfer

between the client and the host takes place in encrypted form. It transfers the input

through the client to the host and returns the output transferred by the host. It

executes through TCP/IP port 22. The encrypted connection is also used to run

the commands on a Linux server, port forwarding, tunnelling, and more.

Syntax: ssh user\_name@host(IP/Domain\_name)

scp

scp (secure copy) command in Linux system is used to copy file(s) between

servers in a secure way. The SCP command or secure copy allows secure

transferring of files in between the local host and the remote host or between

two remote hosts. It uses the same authentication and security as it is used in the

Secure Shell (SSH) protocol. SCP is known for its simplicity, security and preinstalled availability.

Syntax:

scp [-346BCpqrTv] [-c cipher] [-F ssh\_config] [-i identity\_file] [-l limit] [-o

ssh\_option] [-P port] [-S program] [[user@]host1:]file1 … [[user@]host2:]file2

ssh-keygen

SSH or Secure Shell is a useful encrypted protocol to secure connections between

the client and the server for different administrative tasks. It supports various

types of authentication systems. Public key-based authentication and passwordbased authentication are mostly used. Key-based authentication is more secure

than password-based based authentication. Authentication key pairs for the SSH

are generated by the ssh-keygen tool that can be used for different purposes such

as authenticating the host, automating login, etc.

ssh-copy-id

The ssh-copy-id command is a simple tool that allows you to install an SSH key

on a remote server’s authorized keys. This command facilitates SSH key login,

which removes the need for a password for each login, thus ensuring a passwordless, automatic login process. The ssh-copy-id command is part of OpenSSH, a

tool for performing remote system administrations using encrypted SSH

connections.

Eg: sudo apt-get update && sudo apt-get install openssh-client

OUTPUT

$ssh-copy-id

Usage: /usr/bin/ssh-copy-id [-h|-?|-f|-n] [-i [identity\_file]] [-p port] [[-o <ssh -o

options>] ...] [user@]hostname -f: force mode -- copy keys without trying to

check if they are already installed -n: dry run -- no keys are actually copied -h|-

?: print this help.